In re Application of:

Chien et al.

Application No.: 09/954,571

Filed: September 11, 2001

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Amendments to the Claims:

Please amend claim 70 as indicated below in the Listing of Claims.

Please add new claims 98-104.

This listing of claims will replace all prior versions, and listings, of claims in the

application:

Listing of Claims:

1-69 (Cancelled)

70. (Currently amended) A method for treating heart failure associated with loss of

cardiac muscle contractility in a patient, comprising administering to cardiac muscle a

phospholamban (PLB) gene encoding a protein having an S16E mutation therein, to improve

SERCA2 medicated cardiac muscle contractility.

71. (Previously Presented) The method of claim 70, wherein the gene is administered in a

viral gene expression vector.

72. (Previously Presented) The method of claim 70, wherein the viral gene expression

vector further comprises a promoter suitable for use in cardiac muscle.

73. – 76. (Canceled)

77. (Previously Presented) The method of claim 70, wherein the viral gene expression

vector is an adeno-associated viral vector (AAV).

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78. (Previously Presented) The method of claim 70, further comprising co-administering

a sarcoplasmic reticulum CA2+ ATPase (SERCA-2) gene with the PLB gene to the cardiac

muscle.

79 - 85. (Canceled)

86. (Previously Presented) The method of claim 70, wherein the phospholamban gene

further enhances SERCA-2 activity in the cardiac muscle.

87. (Previously Presented) The method of claim 70, wherein the phospholamban gene is

administered with a permeabilizing agent.

88. (Previously Presented) The method of claim 87, wherein the permeabilizing agent is

histamine, substance P or serotonin.

89. (Previously Presented) The method of claim 70, wherein the patient is a human.

90. (Previously Presented) The method of claim 70, wherein the patient is suffering from

cardiac arrest or brachycardia with heart failure at the time that the gene is administered.

91. (Previously Presented) The method of claim 70, wherein the heart is isolated from

systemic circulation at the time that the gene is administered.

92. (Canceled)

93. (Previously Presented) The method of claim 70, wherein practice of the method

reduces the occurrence of cardiac interstitial fibrosis.

94 - 96. (Canceled)

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97. (Previously Presented) The method of claim 70, wherein the viral expression vector

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is an adenoviral vector.

98. (New) A method for treating heart failure associated with loss of cardiac muscle

contractility in a patient, comprising administering to cardiac muscle by intracoronary injection a

phospholamban (PLB) gene encoding a protein having an S16E mutation therein, to improve

SERCA2 medicated cardiac muscle contractility.

99. (New) The method of claim 70, wherein the gene is administered in a viral gene

expression vector.

100. (New) The method of claim 70, wherein the viral gene expression vector further

comprises a promoter suitable for use in cardiac muscle.

101. (New) The method of claim 70, wherein the viral gene expression vector is an

adeno-associated viral vector (AAV).

102. (New) The method of claim 70, further comprising co-administering a sarcoplasmic

reticulum CA2+ ATPase (SERCA-2) gene with the PLB gene to the cardiac muscle.

103. (New) The method of claim 70, wherein the phospholamban gene further enhances

SERCA-2 activity in the cardiac muscle.

104. (New) The method of claim 70, wherein the phospholamban gene is administered

with a permeabilizing agent.

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